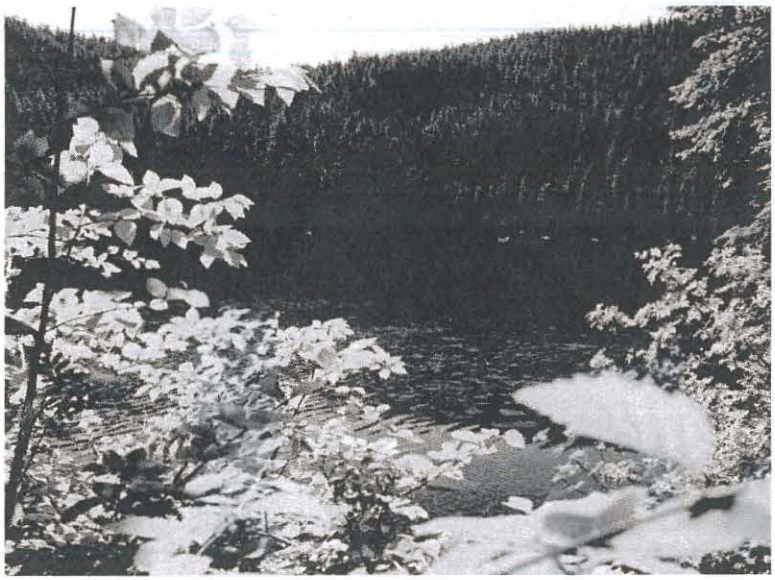
Highway 36/Triangle Lake area Community Meeting on **Pesticide Issues**



- Learn how state and federal agencies are responding to your community concerns
- Share your thoughts on the plan for an exposure investigation
- Find out how you can participate

Thursday, July 14, 2011
6:30 p.m. to 9 p.m.

Triangle Grange Hall
20264 Blachly Grange Rd., Blachly, OR

For more information about the meeting please contact

Karen Bishop at **971-673-1219**

Hosted by the Pesticide Analytical Response Center (PARC)

Highway 36/Triangle Lake Pesticide Exposure Investigation

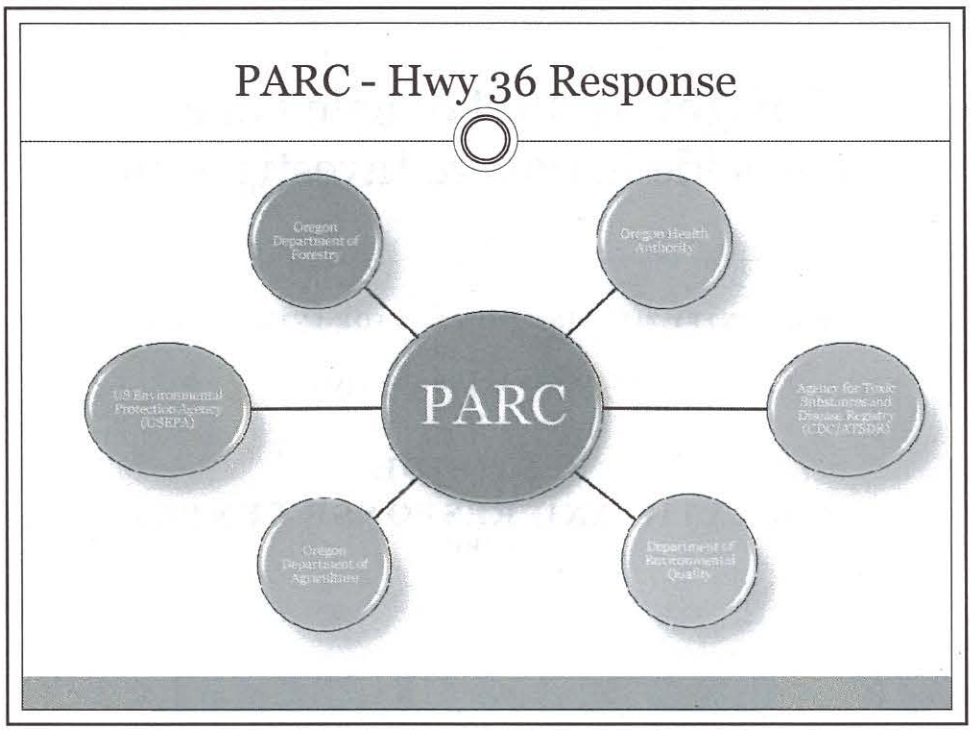
COMMUNITY MEETING TO PROVIDE INFORMATION

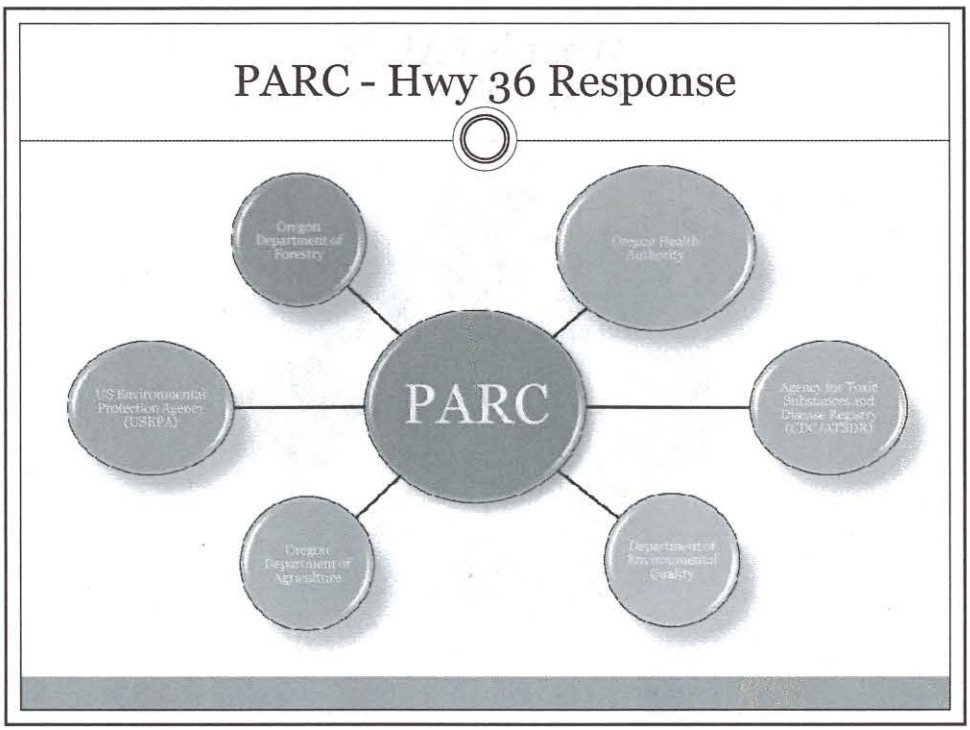
ON ACTIVITIES OF THE

PESTICIDE ANALYTIC AND RESPONSE CENTER (PARC)

What is PARC?

Pesticide Analytic and Response Center


PARC - Hwy 36 Response
Oregon Department of Forestry
Oregon Health Authority
US Environmental Protection Agency (USEPA)
PARC
Agency for Toxic Substances and Disease Registry (CDC/ATSDR)
Oregon Department of Agriculture
Department of Environmental Quality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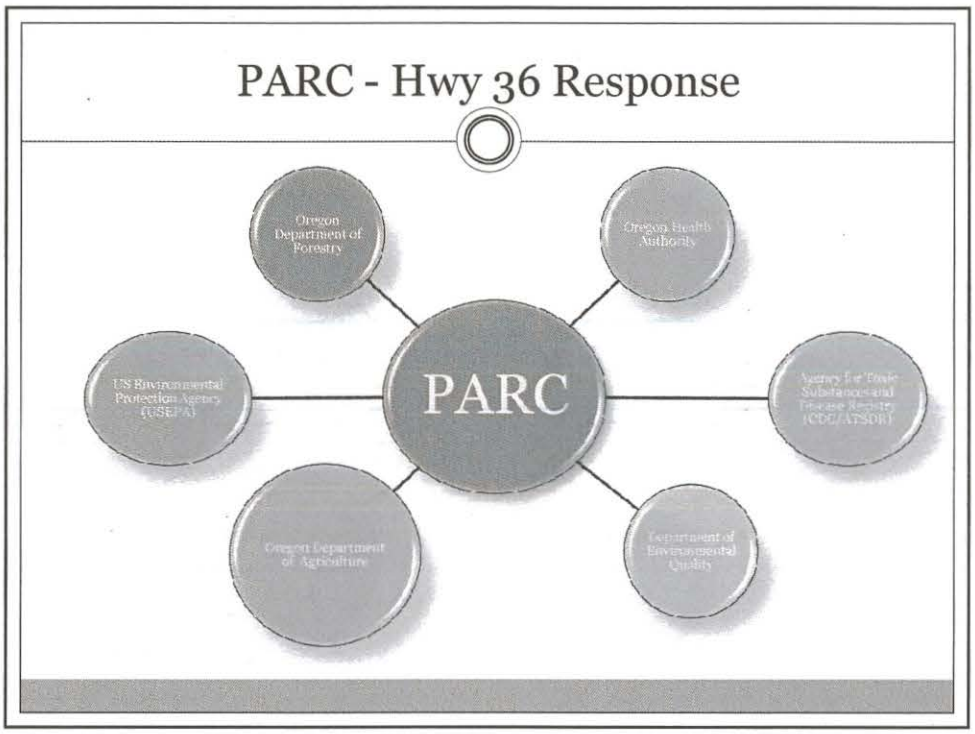
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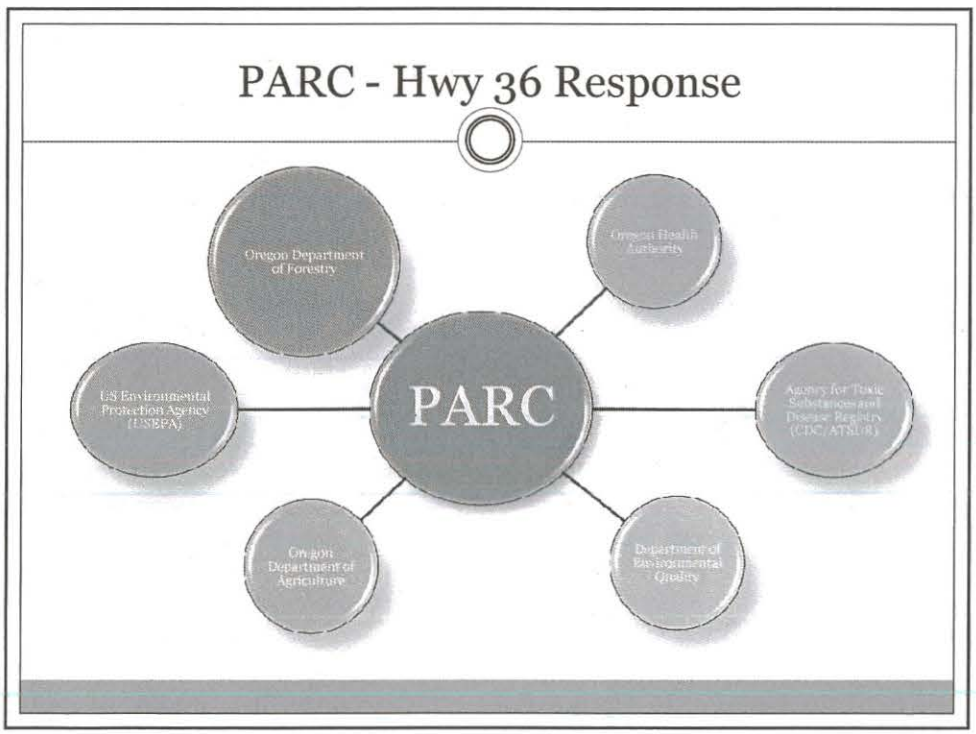
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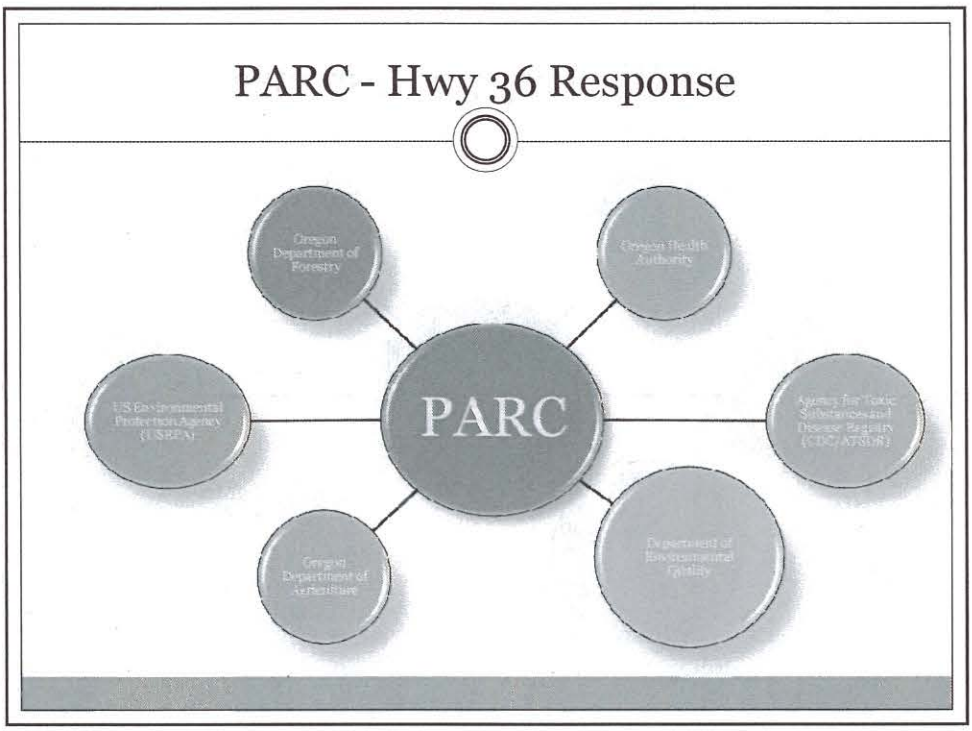
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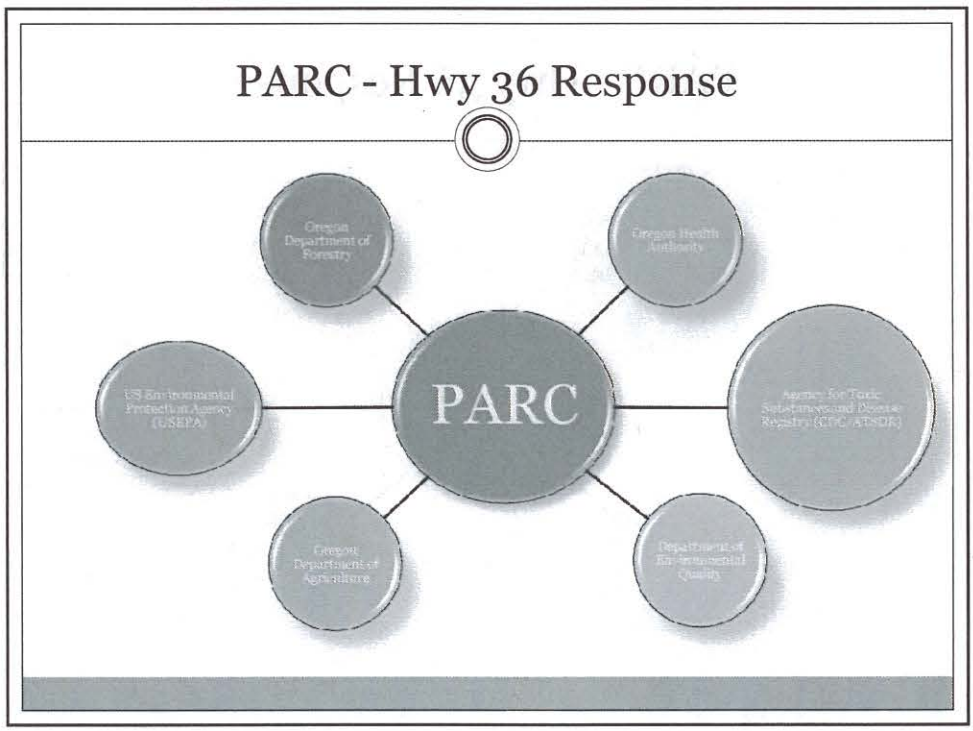
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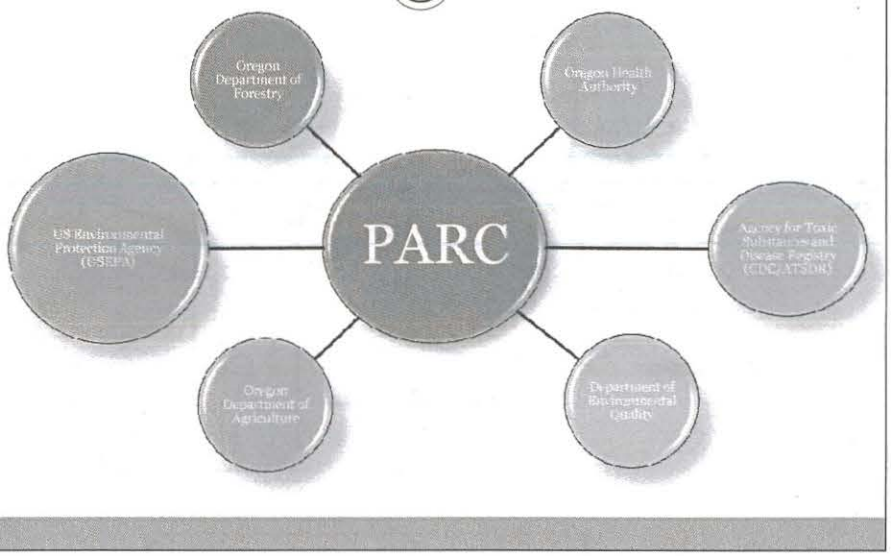
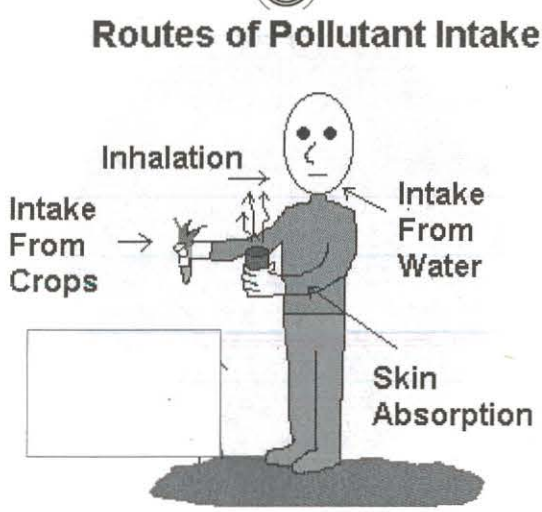
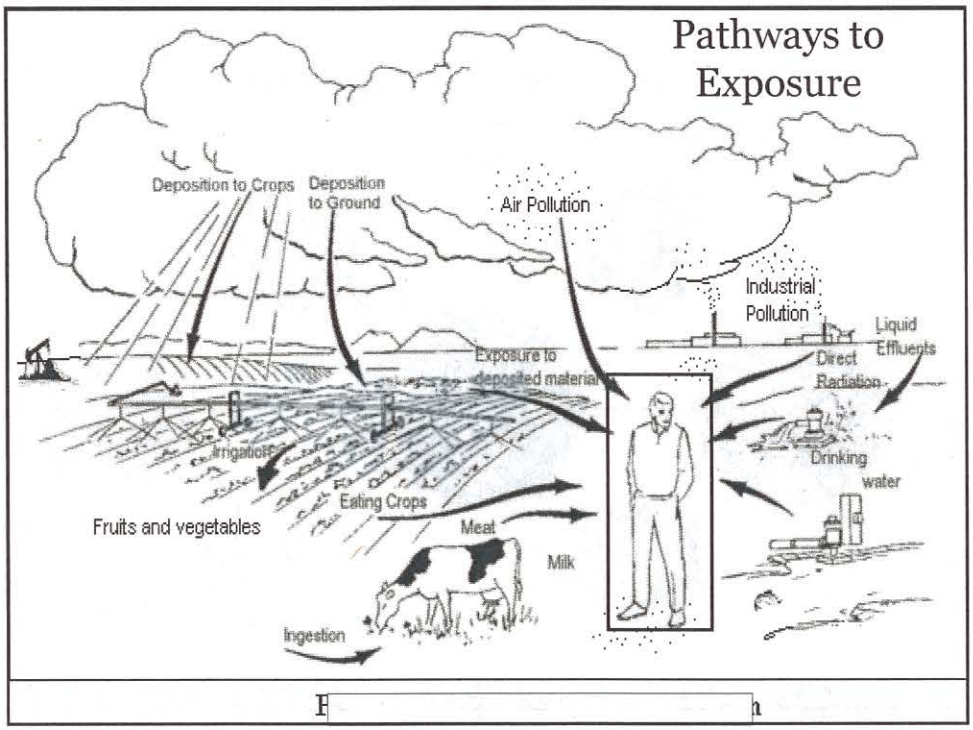
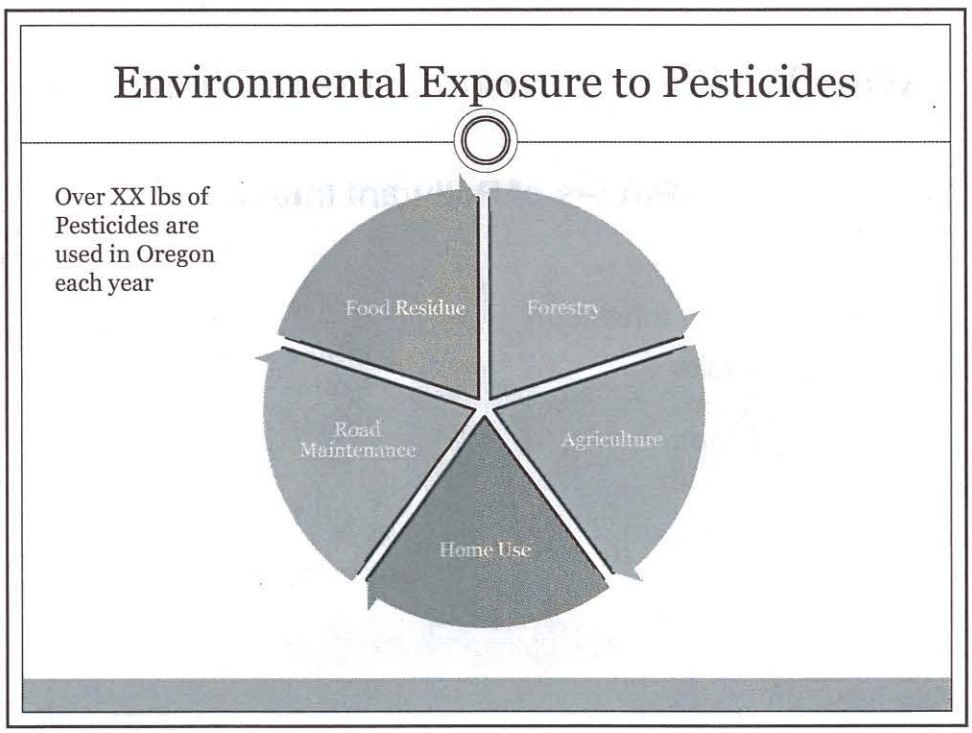
PARC - Hwy 36 Response

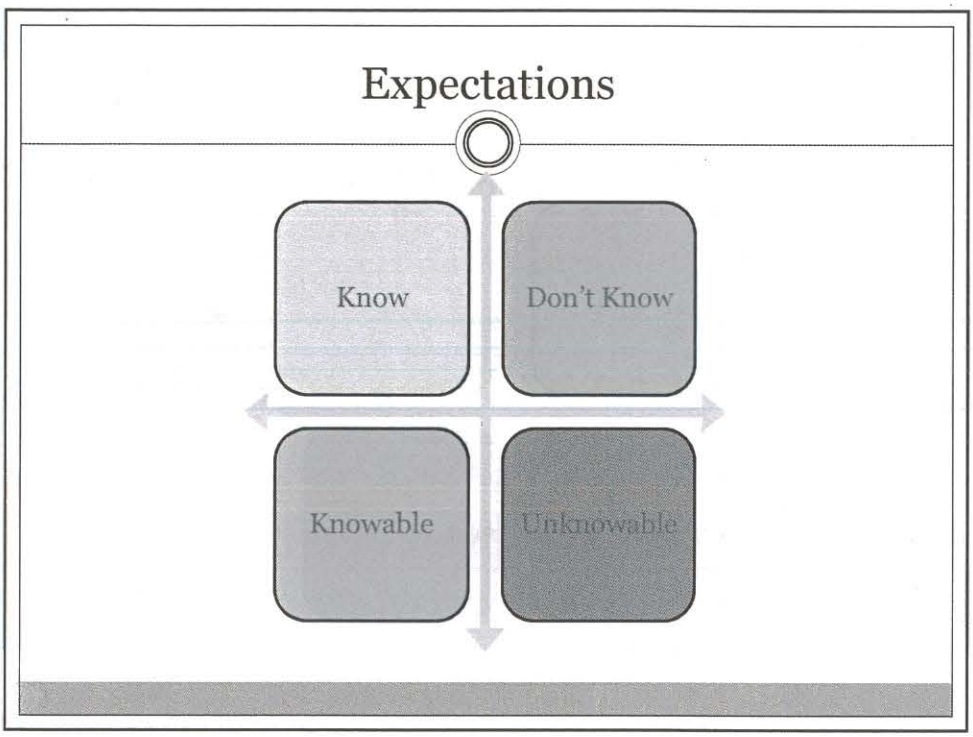


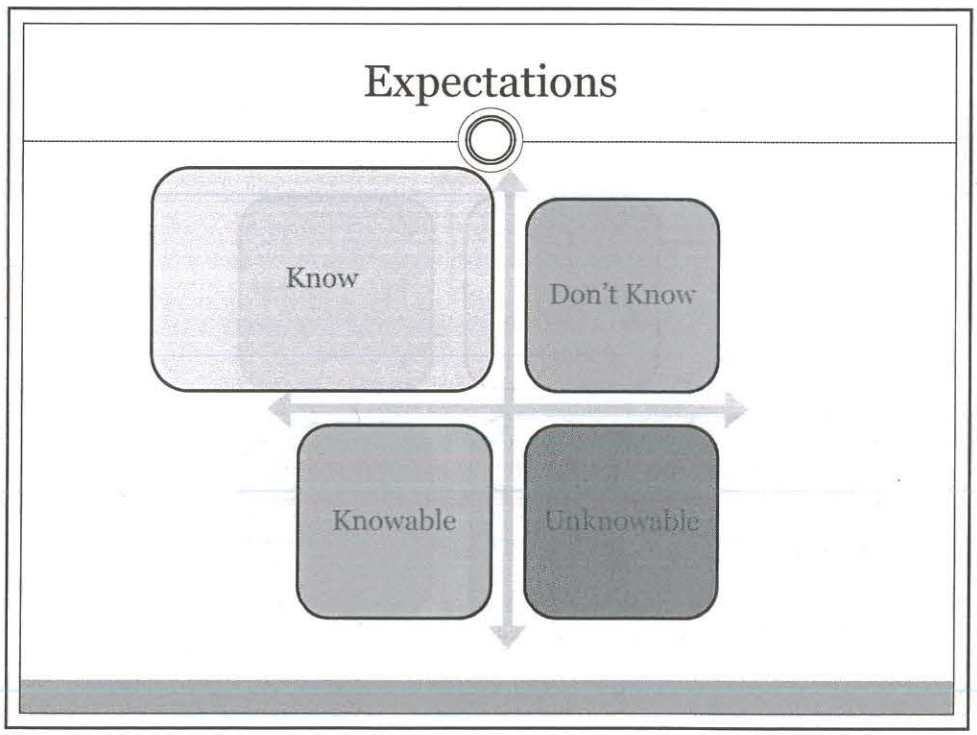
Ways We Come into Contact with Chemicals




Pathways to Exposure
Deposition to Crops
Deposition to Ground
Air Pollution
Industrial Pollution
Liquid Effluents
Direct Radiation
Exposure to deposited material
Irrigation
Drinking water
Eating Crops
Fruits and vegetables
Meat
Milk
Ingestion


Environmental Exposure to Pesticides
Over XX lbs of Pesticides are used in Oregon each year
Food Residue
Forestry
Agriculture
Home Use
Road Maintenance


Expectations
Know
Don't Know
Knowable
Unknowable


Expectations
Know
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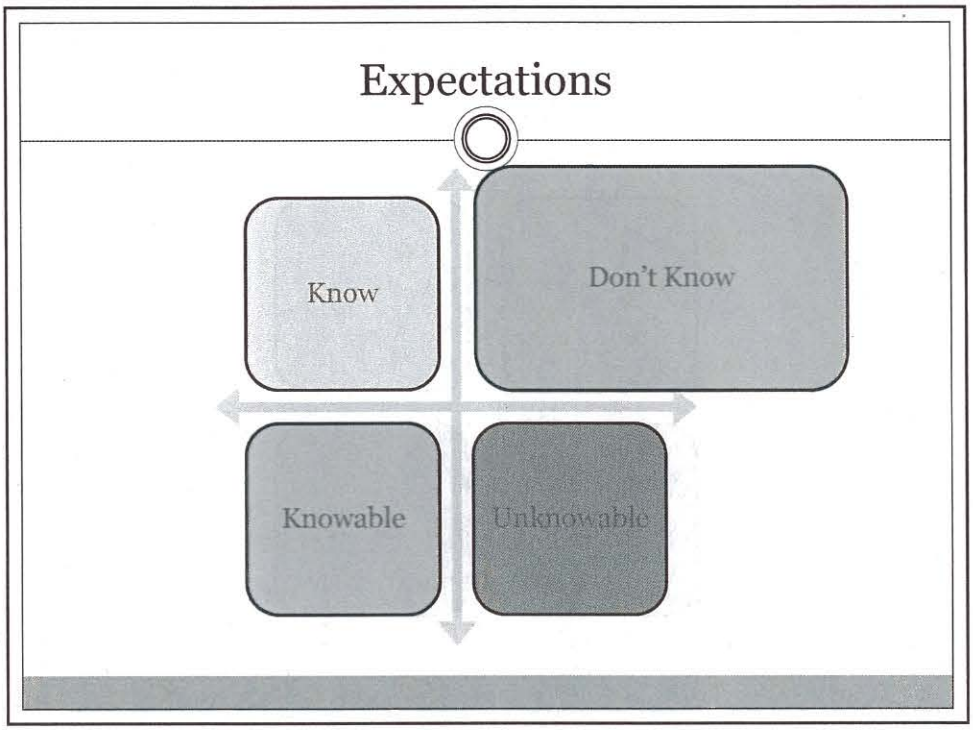
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Know
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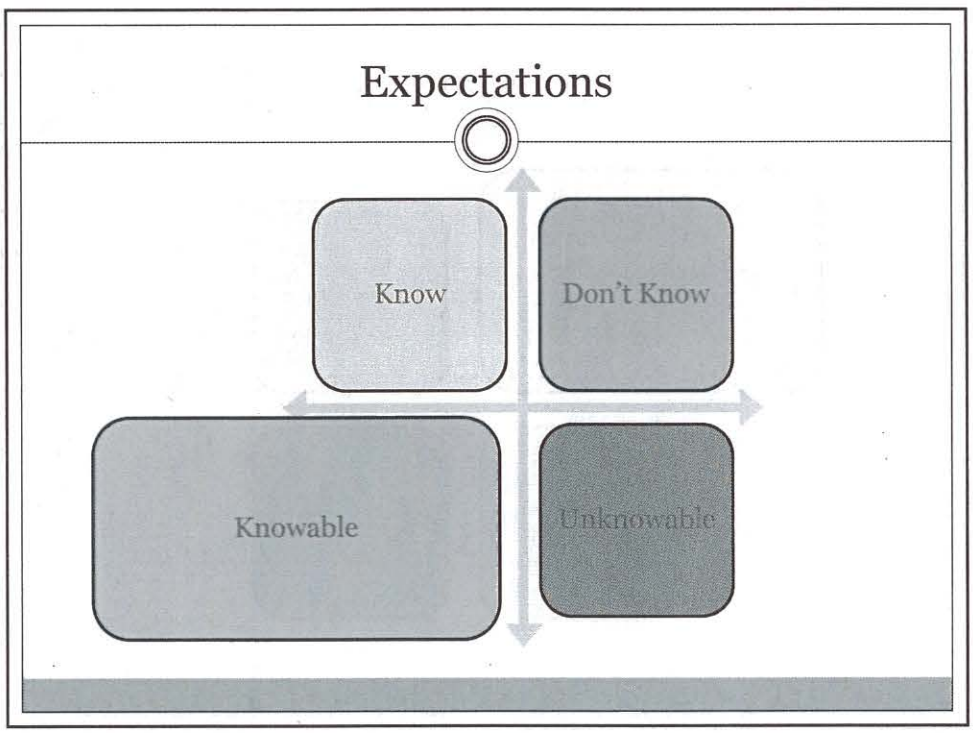
Knowable
Unknowable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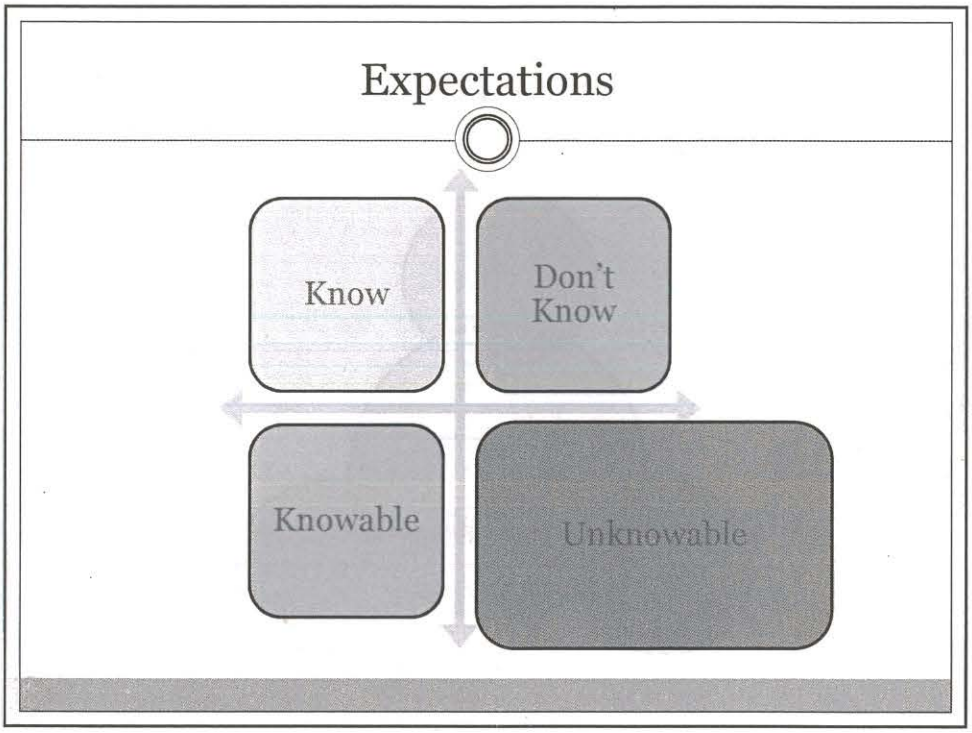
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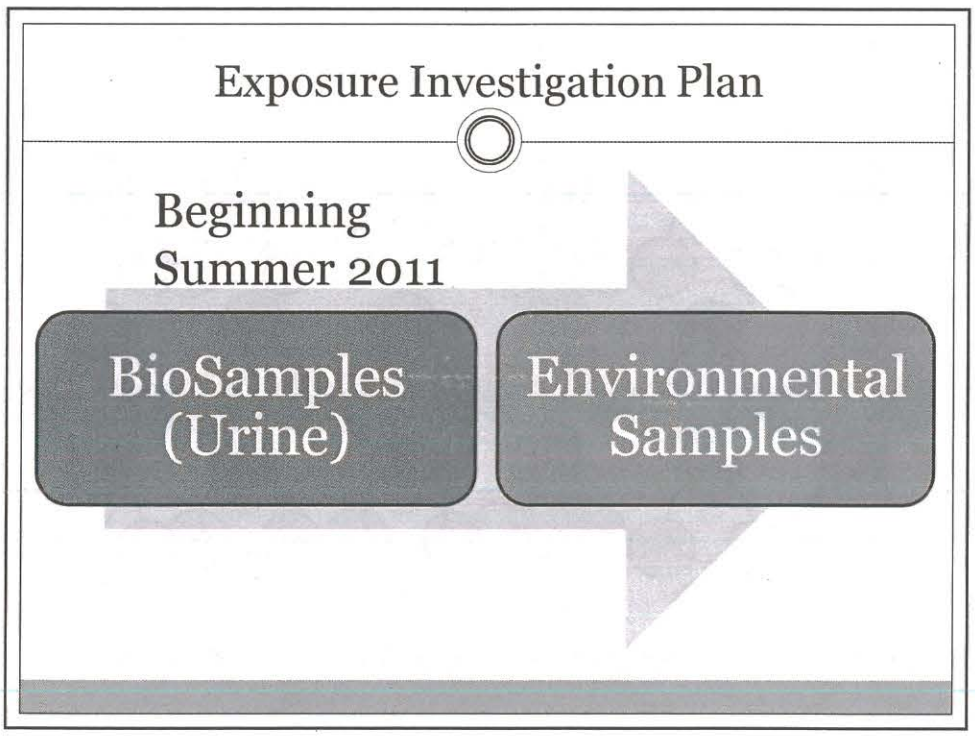
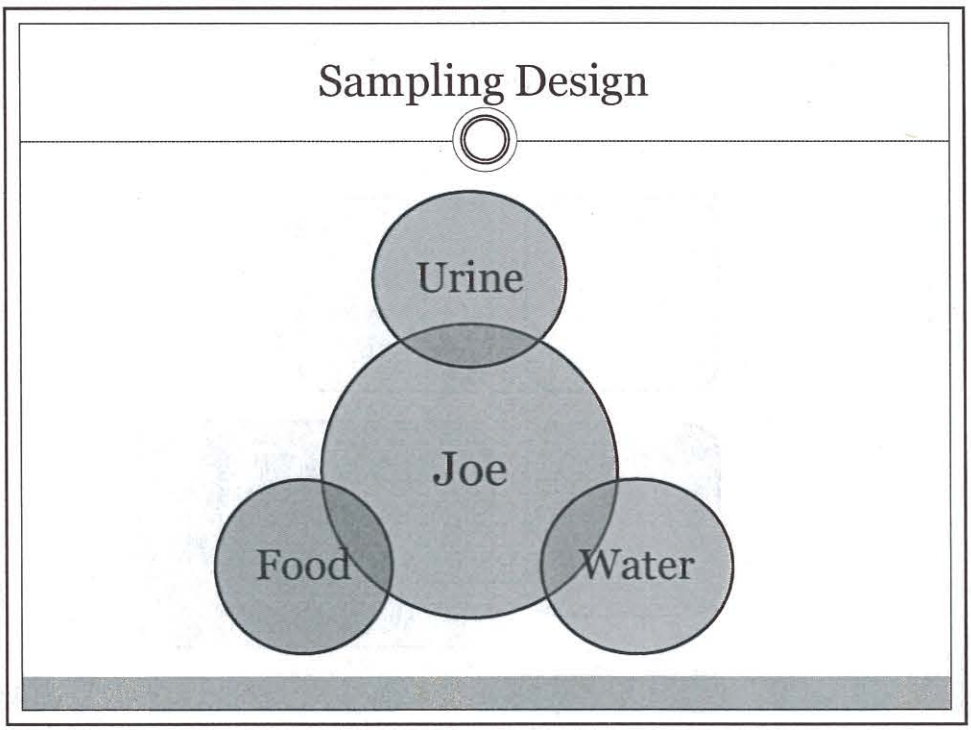
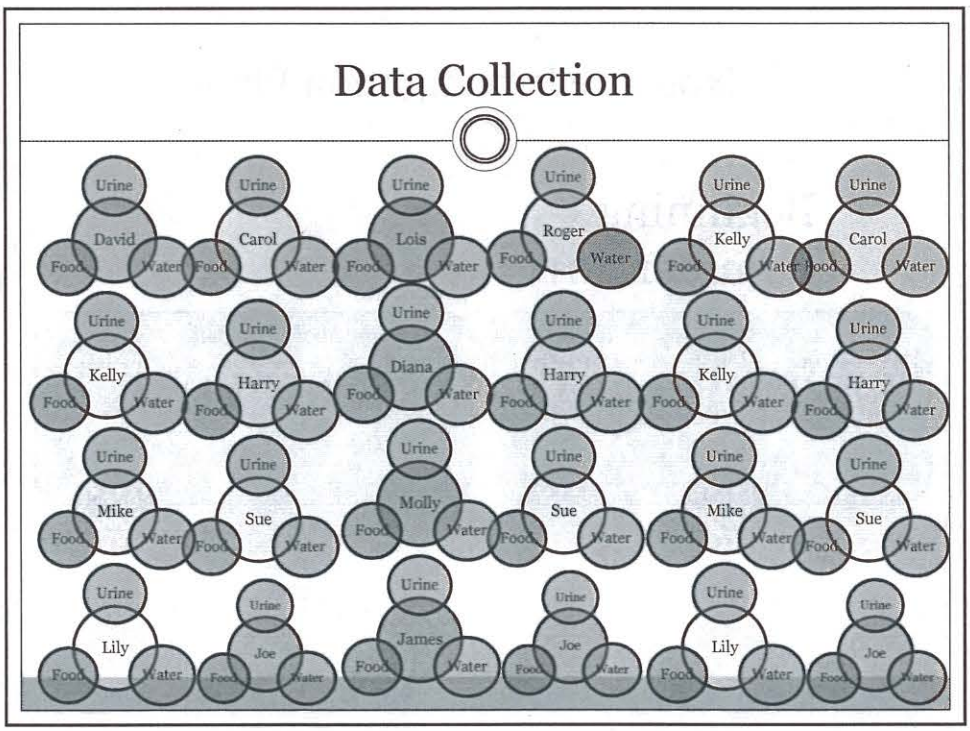

Exposure Investigation Plan
Beginning Summer 2011
BioSamples (Urine)
Environmental Samples


Sampling Design
Urine
Joe
Food
Water

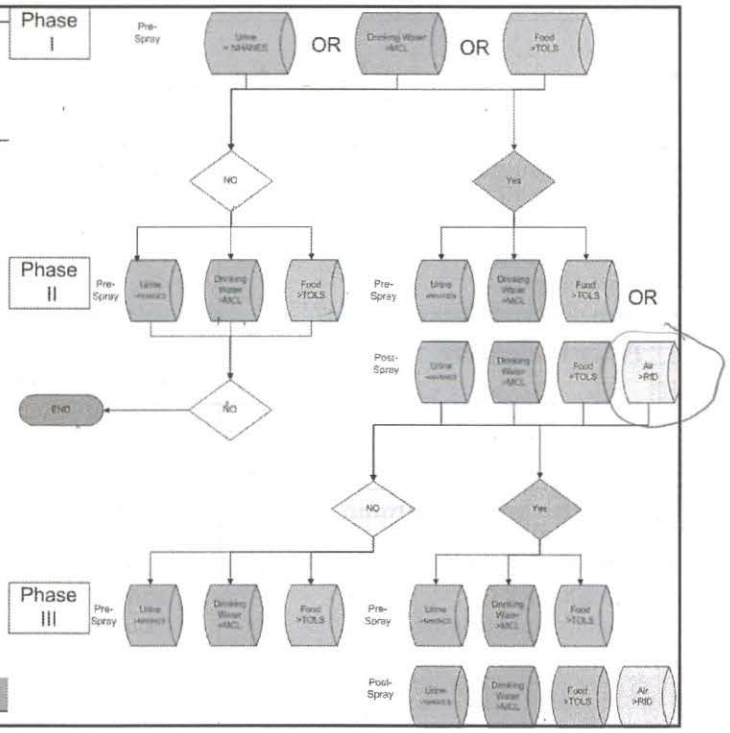

Data Collection
Urine
David
Food
Water
Carol
Lois
Roger
Kelly
Harry
Diana
Mike
Sue
Molly
Lily
James
Joe

Analysis

This is a ***multi-phase*** plan

Each phase includes **human and environmental** sampling

What will be sampled and ***when*** it will be sampled depends on what is measured in the previous phase



Next Steps

Communication

- Recruitment
  - 40 Participants from 30 households are needed
  - 36 from the local area; 4 from outside the area
- Sampling
  - Sampling will begin this Summer and continue until at least Spring 2012
- Results
  - Individuals will receive results as soon as tests are complete
  - The overall results will be reported at the end of the project period

How to contact us

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Scott Downey
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SDowney@sepa.gov

Statement on Behalf of the Thirty-Four Triangle Lake Residents Found to Have Atrazine and 2, 4-D in Our Urine

1. We are cautiously optimistic about the study proposed by the State of Oregon, but will monitor every aspect of it closely to make certain that we feel confident it is valid. For example, testing procedures and labs used must be able to test for herbicide metabolites – the type of testing done by Dr Barr – which, though more expensive than less accurate methods, is the only form of testing that will be considered valid by us, at least in regard to human exposures.

2. We have made clear that we, the thirty-four folks found to have atrazine and 2,4-D in our urine, DO NOT think that drinking water (i.e. wells) is a major pathway related to our contamination. After we received our positive test results, several of us who tested positive had out wells checked and no herbicides were found. Rather, we believe that we were contaminated mostly by: a) aerial spray drift; b) drift by volatilization as described in the brand new drift study described below that found that atrazine drifts off target by volatilization in previously vastly underestimated amounts IF THE SOIL IS MOIST. As this Science Daily synopsis of the new study makes clear, **previous models of atrazine drift did not include the factor of soil moisture,** now known to be the driving factor of this type of drift, for not only atrazine but also other herbicides:

Science News
Pesticide Pathways Into the Atmosphere

ScienceDaily (July 12, 2011) — When soil moisture levels increase, pesticide losses to the atmosphere through volatilization also rise. In one long-term field study, U.S. Department of Agriculture (USDA) scientists found that herbicide volatilization consistently resulted in herbicide losses that exceed losses from field runoff.

Agricultural Research Service (ARS) soil scientist Timothy Gish and ARS micrometeorologist John Prueger led the investigation, which looked at the field dynamics of atrazine and metolachlor, two herbicides commonly used in corn production. Both herbicides are known to contaminate surface and ground water, which was primarily thought to occur through surface runoff.

Gish works at the ARS Hydrology and Remote Sensing Laboratory in Beltsville, Md., and Prueger works at the agency's National Laboratory for Agriculture and the Environment in Ames, Iowa. ARS is USDA's chief intramural scientific research agency, and this work supports the USDA priority of promoting sustainable agriculture.

Many experts believed that volatilization was not a contributing factor to water contamination because atrazine and metolachlor had a low vapor pressure. However, the monitoring of both herbicide volatilization and surface runoff at the field-scale over multiple years had never been done.

So the team set up a 10-year study in an experimental field in Beltsville that is equipped with remote sensing gear and other instrumentation for monitoring local meteorology, air contaminates, soil properties, plant characteristics, and groundwater quality. This allowed the team to carry out their studies on a well-characterized site where only the meteorology -- and the soil water content -- would vary.

Prueger and Gish observed that when air temperatures increased, soil moisture levels had a tremendous impact on how readily atrazine and metolachlor volatilized into the air, a key factor that had not been included in previous models of pesticide volatilization. When soils were dry and air

temperatures increased, there was no increase in herbicide volatilization, but herbicide volatilization increased significantly when temperatures rose and soils were wet.
Most surprising was that throughout the study, herbicide volatilization losses were significantly larger than surface runoff. When averaged over the two herbicides, loss by volatilization was about 25 times larger than losses from surface runoff.
END OF STORY

In the light of the above new study, we believe that any study of the pathways of exposure should include a method of checking for drift by volatilization. And because those of us who did second urine samples immediately after the aerial spraying of atrazine and 2,4-D saw our levels spike immediately after those sprays, we have every reason to believe that our major pathway of comtamination is from aerial spray drift, and we thus ask that OHA include an aerial drift component to this study. While we welcome the testing of wells, we would not welcome a trumpeting to the media of negative results on well-testing to the media as a sign that "nothing is being found" in the Triangle Lake study. That false impression could easily occur.

3. Another pathway of exposure that we want studied is the movement of herbicide by fog. Here follows a synopsis of a study done that found that fog does transport pesticide off target.

Transport and Fate of Pesticides in Fog in California's Central Valley

- Abstract
- Hi-Res PDF[2884 KB]
- PDF w/ Links[2892 KB]

James N. Seiber and , James E. Woodrow

Center for Environmental Sciences and Engineering, University of Nevada at Reno, Reno, NV 89557

Agrochemical Fate and Movement

Chapter 21, pp 323-346

Chapter DOI: 10.1021/bk-2000-0751.ch021

ACS Symposium Series, Vol. 751

ISBN13: 9780841236080**eISBN:** 9780841217577

Publication Date (Print): April 03, 2000

Peer-Reviewed Book Chapter

Abstract

Wet deposition, which includes the scavenging of particle bound pesticides and pesticide vapors into atmospheric moisture (cloud and fogwater, rain and snow), is a potentially major sink for airborne pesticides. The pervasive wintertime tule fogs in California's Central Valley, studied extensively in the past 12 years, accumulate organophosphorus, triazine, and other pesticide groups. Concentrations of some pesticides in fogwater can significantly exceed those expected based upon vapor-water distribution coefficients. Fogwater deposition has been implicated as a source of inadvertent residues to non-target foliage, and of high-risk exposures for raptors residing in and around treated areas. The pesticide residue content of fogwater, and its significance in terms of transport, fate, and exposure are reviewed.

ScienceDaily
Your source for the latest research news

Web address: **http://www.sciencedaily.com/releases/2011/07/110712152210.htm**

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New ARS studies indicate that some pesticides used in corn production volatilize directly into the air and that pesticide losses from volatilization sometimes exceeds pesticide losses from runoff. (Credit: Photo courtesy of NRCS-USDA.)

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Story Source:

The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **USDA/Agricultural Research Service**.

Journal Reference:

1. Timothy J. Gish, John H. Prueger, Craig S.t. Daughtry, William P. Kustas, Lynn G. Mckee, Andrew L. Russ, and Jerry L. Hatfield. **Comparison of Field-scale Herbicide Runoff and Volatilization Losses: An Eight-Year Field Investigation**. *Journal of Environmental Quality*, 14 Sept. 2010. DOI: 10.2134/jeq2010.0092

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◉ APA